

IN THE CLAIMS

Please cancel without prejudice claims 42-77.

Please amend claims 1, 3, 6-7, 19, 22-27, 29-34, and 36 as indicated below.

Please add new claims 78-81 as indicated below.

1. (Currently Amended) A network switch comprising:
~~having~~ an asynchronous mesh; ~~to transfer data from ingress interfaces to egress~~
~~interfaces, the~~
ingress interfaces coupled to the asynchronous mesh, the ingress interfaces having an
ingress scheduler to receive data from external sources and to selectively
schedule and asynchronously transmit the data across the asynchronous mesh
according to a first schedule; and to the egress interfaces, the
egress interfaces coupled to the asynchronous mesh, the egress interfaces having an
egress scheduler to receive data from the asynchronous mesh and to schedule
and transmit the data to external destinations according to a second schedule
different than the first schedule, wherein the ingress scheduler performs
scheduling and transmitting data across the asynchronous mesh independent of
the egress scheduler performing scheduling and transmitting data to the
external destinations, wherein one or more of the N ingress interfaces
segregates incoming data into queues based on a service class identifier.
2. (Canceled)

3. (Currently Amended) The network switch of claim 1 further comprising:
N ingress interfaces, each of the N ingress interfaces including N independent cache
buffers to temporarily store incoming data at the ingress interfaces; and
N egress interfaces, each of the N egress interfaces ~~further comprising~~ including N
independent cache buffers to temporarily store at the egress interfaces
incoming data received from the N ingress interfaces coupled to N respective
ingress interfaces to receive data from the respective N ingress interfaces and
further comprising N ingress interfaces,
wherein each of the N ingress interfaces having N independent cache buffers, each of
the N independent cache buffers of each of the N ingress interfaces is coupled
to one of N respective egress interfaces and wherein each of the N independent
cache buffers of each of the N egress interfaces is coupled to one of N
respective ingress interfaces respectively.

4-5. (Canceled)

6. (Currently Amended) The network switch of claim 3 in which the egress interfaces
generate a flow control signal to prevent access to one or more of the N buffers of the
respective egress interfaces when an amount of data stored in the one or more of the N buffers
exceeds a predetermined threshold.

7. (Currently Amended) The network switch of claim 3 wherein the egress interfaces
generate a flow control signal to prevent transmission to one or more of the N buffers of the

respective egress interfaces when an amount of data stored in the one or more of the N buffers exceeds a predetermined threshold.

8. (Original) The network switch of claim 3 wherein the N ingress interfaces transfer data to a shared egress buffer and further wherein the egress interfaces schedule and retrieve the data stored in the shared egress buffer prior to transmitting the data to the external destinations.

9. (Previously Presented) The network switch of claim 1 in which the egress interfaces generate a flow control signal to prevent access by one or more of the queues at the ingress interfaces to the egress buffer.

10. (Original) The network switch of claim 3 in which the N ingress interfaces concurrently transmit fixed-length cells and variable-length packets across the mesh to the egress interfaces.

11-18. (Canceled)

19. (Currently Amended) A network switch comprising:

N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card according to

a first schedule, and ~~further~~ wherein one or more of the ingress cards segregates incoming data into queues based on a service class identifier; and

M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations according to a second schedule different then the first schedule,

wherein the ingress scheduler and the egress scheduler schedule and transmit data independent of each other.

20. (Original) The network switch of claim 19 wherein N and M are equal.

21. (Canceled)

22. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations; The~~ network switch of claim 1 wherein one or more of the ingress interfaces segregates incoming data into queues based on a flow identifier.

23. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external~~

~~sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations, The network switch of claim 1 wherein one or more of the N ingress interfaces segregates incoming data into queues based on a user identifier.~~

24. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations, The network switch of claim 1 wherein one or more of the N ingress interfaces segregates incoming data into queues based on a session identifier.~~

25. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations, The network switch of claim 1 wherein one or more of the N ingress interfaces segregates incoming data into queues based on a quality of service (QoS) identifier.~~

26. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external~~

~~sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations; The network switch of claim 1 wherein one or more of the N ingress interfaces segregates incoming data into queues based on a priority identifier.~~

27. (Currently Amended) ~~A network switch having an asynchronous mesh to transfer data from ingress interfaces to egress interfaces, the ingress interfaces to receive data from external sources and to selectively schedule and asynchronously transmit the data across the asynchronous mesh to the egress interfaces, the egress interfaces to receive data from the asynchronous mesh and to schedule and transmit the data to external destinations; The network switch of claim 1 wherein one or more of the N ingress interfaces segregates incoming data into queues based on a deadline identifier.~~

28. (Canceled)

29. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~
The network switch of claim 19 wherein one or more of the ingress cards segregates incoming data into queues based on a flow identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

30. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~
The network switch of claim 19 wherein one or more of the ingress cards segregates incoming data into queues based on a user identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

31. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~

The network switch of claim 19 wherein one or more of the ingress cards segregates incoming data into queues based on a session identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

32. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~

The network switch of claim 19 wherein one or more of the ingress cards segregates incoming data into queues based on a quality of service (QoS) identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

33. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an~~

~~ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~
The network switch of claim 19 wherein one or more of the ingress cards segregates incoming data into queues based on a priority identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

34. (Currently Amended) ~~A network switch comprising:~~

~~N ingress cards coupled to receive data from external sources, the N ingress cards having a plurality of ports to transmit data, wherein each of the N ingress cards comprises an ingress scheduler coupled to the ports of the ingress card, the ingress scheduler to cause data to be selectively and asynchronously transmitted via the ports of the ingress card, and further~~
The network switch of claim 19 wherein one or more of the ingress interfaces segregates incoming data into queues based on a deadline identifier; and

~~M egress cards having ports coupled to receive data from one or more of the plurality of ports of the N ingress cards, the egress cards coupled to transmit data to external destinations, wherein each of the M egress cards comprises an egress scheduler coupled to the ports of the egress card, the egress scheduler to cause data to be selectively transmitted to the external destinations.~~

35. (Canceled)

36. (Currently Amended) The network switch of claim [[22]] 19 further comprising:

N ingress interfaces, each of the N ingress interfaces including N independent cache buffers to temporarily store incoming data at the ingress interfaces; and

N egress interfaces, each of the egress interfaces including further comprising N independent cache buffers to temporarily store data received from the N ingress interfaces coupled to N respective ingress interfaces to receive data from the respective N ingress interfaces and further comprising N ingress interfaces,

wherein each of the N ingress interfaces having N independent cache buffers, each of the N independent cache buffers of each ingress interface is coupled to one of N respective egress interfaces and wherein each of the N independent cache buffers of each egress interface is coupled to one of N respective ingress interfaces.

37. (Previously Presented) The network switch of claim 36 in which the egress interfaces generate a flow control signal to prevent access to one or more of the N buffers of the respective egress interfaces.

38. (Previously Presented) The network switch of claim 36 wherein the egress interfaces generate a flow control signal to prevent transmission to one or more of the N buffers of the respective egress interfaces.

39. (Previously Presented) The network switch of claim 36 wherein the N ingress interfaces transfer data to a shared egress buffer and further wherein the egress interfaces

schedule and retrieve the data stored in the shared egress buffer prior to transmitting the data to the external destinations.

40. (Previously Presented) The network switch of claim 22 in which the egress interfaces generate a flow control signal to prevent access by one or more of the queues at the ingress interfaces to the egress buffer.

41. (Previously Presented) The network switch of claim 36 in which the N ingress interfaces concurrently transmit fixed-length cells and variable-length packets across the mesh to the egress interfaces.

42. – 77. (Canceled)

78. (New) The network switch of claim 1, wherein each cache buffer of each egress interface comprises one or more queues, each of the one or more queues corresponding to a distinctive service class, and wherein the data received from the ingress interfaces is stored in the one or more queues based on the service class identifier associated with the data.

79. (New) The network switch of claim 78, wherein each of the queues is associated with a respective priority.

80. (New) The network switch of claim 79, wherein the egress scheduler schedules and transmits data from each of the queues to the external sources according to a schedule associated with each of the queues determined based on the respective priority.

81. (New) The network switch of claim 80, wherein if an amount of data stored in one of the queues of an egress interface exceeds a predetermined threshold, the egress scheduler transmits a backpressure signal to the corresponding ingress interface, and wherein in response to the backpressure signal, the corresponding ingress interface prevents data having a service class associated with the queue of the egress interface from being transmitted to the egress interface, while allowing data of other service classes to be transmitted to the egress interface.